

FORM-PTO-1390  
(Rev. 12-29-99)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

**TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US)  
CONCERNING A FILING UNDER 35 U.S.C. 371**

022701-906

U.S. APPLICATION NO. (If known, see 37 C.F.R. 1.5)

**09/719247**INTERNATIONAL APPLICATION NO.  
PCT/FR99/01313INTERNATIONAL FILING DATE  
4 June 1999PRIORITY DATE CLAIMED  
11 June 1998

## TITLE OF INVENTION

USE OF THREE-DIMENSIONAL CRIMPING FIBRES FOR MAKING STAYING MATERIAL, AND RESULTING STAYING MATERIAL

## APPLICANT(S) FOR DO/EO/US

Harmut KRATZKE; Jurgen LASCH; Carsten SCHEFFLER; Helmut SCHULTZ

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and the PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
  - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☒ has been transmitted by the International Bureau.
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US)
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
  - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☐ have been transmitted by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

## Items 11. to 16. below concern other document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A FIRST preliminary amendment.  
☐ A SECOND or SUBSEQUENT preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☐ Other items or information:

U.S. APPLICATION NO. (if known, see 37 C.F.R. 1.50)

09/719247

INTERNATIONAL APPLICATION NO.  
PCT/FR99/01313ATTORNEY'S DOCKET NUMBER  
022701-90617. ☒ The following fees are submitted:

CALCULATIONS

PTO USE ONLY

**Basic National Fee (37 CFR 1.492(a)(1)-(5)):**Neither international preliminary examination fee (37 CFR 1.482)  
nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO  
and International Search Report not prepared by the EPO or JPO ..... \$1,000.00 (960)International preliminary examination fee (37 CFR 1.482) not paid to  
USPTO but International Search Report prepared by the EPO or JPO ..... \$860.00 (970)International preliminary examination fee (37 CFR 1.482) not paid to USPTO  
but international search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... \$710.00 (958)International preliminary examination fee paid to USPTO (37 CFR 1.482)  
but all claims did not satisfy provisions of PCT Article 33(1)-(4) ..... \$690.00 (956)International preliminary examination fee paid to USPTO (37 CFR 1.482)  
and all claims satisfied provisions of PCT Article 33(1)-(4) ..... \$100.00 (962)**ENTER APPROPRIATE BASIC FEE AMOUNT =**

\$ 860.00

Surcharge of \$130.00 (154) for furnishing the oath or declaration later than  
months from the earliest claimed priority date (37 CFR 1.492(e)).20 ☐ 30 ☐

\$

Claims

Number Filed

Number Extra

Rate

Total Claims

14 -20 =

0

X\$18.00 (966)

\$ 0

Independent Claims

3 -3 =

0

X\$80.00 (964)

\$ 0

Multiple dependent claim(s) (if applicable)

+ \$270.00 (968)

\$

**TOTAL OF ABOVE CALCULATIONS =**

\$ 860.00

Reduction for 1/2 for filing by small entity, if applicable. Verified Small Entity statement must also be  
filed. (Note 37 CFR 1.9, 1.27, 1.28).

\$

**SUBTOTAL =**

\$ 860.00

Processing fee of \$130.00 (156) for furnishing the English translation later than  
months from the earliest claimed priority date (37 CFR 1.492(f)).20 ☐ 30 ☐

\$

+

**TOTAL NATIONAL FEE =**

\$ 860.00

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by  
an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 (581) per property +

\$

**TOTAL FEES ENCLOSED =**

\$ 860.00

Amount to be:  
refunded \$

charged \$

- a. ☒ A check in the amount of \$ 860.00 to cover the above fees is enclosed.
- b. ☐ Please charge my Deposit Account No. 02-4800 in the amount of \$ to cover the above fees. A duplicate copy of this sheet is enclosed.
- c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 02-4800. A duplicate copy of this sheet is enclosed.

**NOTE:** Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

Norman H. Stepno  
BURNS, DOANE, SWECKER & MATHIS, L.L.P.  
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SIGNATURE

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NAME

30,427

REGISTRATION NUMBER

09/719247

JCO1 Rec'd PCT/PTO 08 DEC 2000

Patent  
Attorney's Docket No. 022701-906

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of	)	
	)	
Harmut KRATZKE et al.	)	Group Art Unit: Unassigned
	)	
Application No.: Unassigned	)	Examiner: Unassigned
(Corresponds to PCT/FR99/01313)	)	
	)	
International Filing Date: 4 June 1999	)	
	)	
For: USE OF THREE-DIMENSIONAL	)	
CRIMPING FIBRES FOR MAKING	)	
STAYING MATERIAL, AND	)	
RESULTING STAYING MATERIAL	)	

**PRELIMINARY AMENDMENT**

**BOX PCT**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-captioned application as follows:

**IN THE CLAIMS:**

Kindly amend the claims as follows:

1. (Amended) [The use of crimped fibers for the production of nonwoven surfaces intended to be used as interlining or filling fabric for garments,] Fabric having non-woven surfaces comprising crimped fibers, wherein said [characterized in that the] fibers have three-dimensional crimps and a yarn count of between 0.9 dtex and 5 dtex[, preferably between 1 and 3.3 dtex].
  
2. (Amended) The [use] fabric as claimed in claim 1, [characterized in that] wherein the fibers are obtained by spinning a polyamide-based composition.

3. (Amended) The [use] fabric as claimed in claim 1 [or 2], [characterized in that] wherein the polyamide is [chosen] selected from the group comprising nylon-6,6, nylon-6, nylon-6,10, nylon-4,6, nylon-11, nylon-12, and copolyamides thereof.

4. (Amended) The [use] fabric as claimed in [one of the preceding claims] claim 1, [characterized in that] wherein the fibers are crimped in a pneumatic crimping process by packing a tow into a nozzle.

5. (Amended) The [use] fabric as claimed in claim 4, [characterized in that] wherein the gas phase used in the pneumatic crimping process is [chosen] selected from the group comprising air, steam [or] and an air/steam mixture.

6. (Amended) The [use] fabric as claimed in [one of the preceding claims], claim 1 [characterized in that] wherein the fibers have pigtail-shaped loops and/or curls.

8. (Amended) The nonwoven as claimed in claim 7, [characterized in that it] which is used as interlining in the making-up of garments.

9. (Amended) The nonwoven as claimed in claim 7 [or 8], [characterized in that it includes] comprising at least one layer formed from a nonwoven comprising fibers with a three-dimensional crimp.

10. (Amended) The nonwoven as claimed in [one of claims 7 to 9] claim 7,  
[characterized in that it] which forms a napped textile surface.

11. (Amended) The nonwoven as claimed in [one of claims 7 to 10] claim 7,  
[characterized in that it] which has a grammage of between 10 g/m<sup>2</sup> and 200 g/m<sup>2</sup>[,  
preferably between 20 and 100 g/m<sup>2</sup>].

Kindly add the following claims:

--12. The fabric according to claim 1, wherein the yarn count is between 1 and 3.3  
dtex.

13. A method for producing a nonwoven surface on a fabric comprising  
introducing crimped fibers having three-dimensional crimps and a yarn count of between  
0.9 dtex and 5 dtex during the preparation of the fabric.

14. A garment comprising the fabric according to claim 1.--

#### **REMARKS**

Entry of the foregoing amendment(s) is respectfully requested.

The claims have been amended to eliminate multiple dependency and to place them  
in better condition for U.S. patent practice.

Should the Examiner have any questions concerning the subject application, a telephone call to the undersigned would be appreciated.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: 

Teresa Stanek Rea  
Registration No. 30,427

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Date: December 8, 2000

09/719247

WO 99/64650

PCT/FR99/01313

1

JCO1 Rec'd PCT/PTO 08 DEC 2000

USE OF FIBERS WITH A THREE-DIMENSIONAL CRIMP FOR THE  
MANUFACTURE OF INTERLINING OR STIFFENING FABRIC, AND  
INTERLINING FABRIC OBTAINED

5           The invention relates to the use of fibers with  
a three-dimensional crimp for the manufacture of inter-  
lining fabrics, such as stiffening fabrics for  
garments, and to the fabrics thus obtained.

10           The term "interlining fabrics", which are also  
called "stiffening fabrics", should be understood to  
mean especially plain-weave and twill-weave fabrics,  
nonwoven textile surfaces, felts, or surfaces with a  
napped appearance used especially as lining and  
retention fabrics in the making-up of garments.

15           These fabrics are also called "interlining".

Of course, the interlining fabrics may be used  
in other applications without thereby departing from  
the scope of the invention.

20           These interlining fabrics are used in making up  
garments in order to improve their strength, their  
esthetic appearance and their comfort.

25           These interlinings may be made from continuous  
yarns, spun yarns or fibers obtained from natural  
material, artificial material or synthetic material. In  
general, the continuous yarns are crimped yarns. The

crimped yarns or fibers are generally used to give bulk to the interlining.

However, in the case of nonwoven surfaces to which the invention more particularly relates, the crimped fibers used are fibers made of synthetic material, such as polyamide fibers, the crimp of which is generally obtained by mechanical crimping, that is to say the fibers have a two-dimensional crimp. This two-dimensional crimp has drawbacks since it generates a limited bulking effect. In addition, the curvature of each crimp is very pronounced, forming points which, to the touch, give a sensation similar to that generated by the ends of the fibers.

One of the objects of the present invention is to eliminate these drawbacks by providing nonwoven interlinings having a greater bulk and an improved appearance.

For this purpose, the invention proposes the use of fibers with a three-dimensional crimp and a yarn count of between 0.9 dtex and 5 dtex which are obtained by spinning a polyamide-based composition for the production of nonwoven interlinings, especially those used in the making-up of garments.

The nonwoven stiffening fabrics used as interlining may comprise a nonwoven surface coated on at least one face with a binding or sizing composition for its attachment to the fabric for making up the garment. It may comprise several layers of nonwovens



bonded together in a manner known per se. These nonwovens may also be combined with other textile surfaces of different type in order to produce the interlining.

- 5           The interlinings or nonwovens according to the invention may include other crimped or uncrimped fibers of the same or different material. They may also be combined with continuous yarns or spun yarns.

          According to a preferred characteristic of the  
10 invention, the nonwoven surfaces of the invention have a grammage of between 10 g/m<sup>2</sup> and 200 g/m<sup>2</sup>, preferably between 20 and 100 g/m<sup>2</sup>.

          According to a preferred characteristic of the invention, the crimped fibers used for producing an  
15 interlining advantageously have a yarn count of between 0.9 and 3.3 dtex.

          The crimped fibers of the invention are obtained by spinning a composition based on a synthetic material, advantageously such as a polyamide or  
20 copolyamide.

          As examples of polyamides or copolyamides suitable for the invention, mention may be made of polyhexamethylene adipamide, polycaprolactam, copolymers of these two polyamides or blends thereof.  
25 These polyamides may also include other repeat units such as sulfonate aromatic units, like the repeat unit derived from 5-sulfoisophthalic acid or the like, or

units derived from other dicarboxylic acids such as isophthalic or terephthalic acids or diamines.

Other polyamides may also be mentioned, such as PA-6,10, PA-4,6, PA-11 and PA-12.

5       The polyamides may also be used with various additives, such as pigments, matting agents, heat or light stabilizers, heat-protection agents, antimicrobial agents, antisoiling agents or the like. This list is in no way exhaustive.

10       As preferred polyamides, mention may be made of polyhexamethylene adipamide, polycaprolactam and copolyamides or blends comprising mostly hexamethylene adipamide units or polycaprolactam units.

15       The fibers may have varied cross-sectional shapes, such as round or multilobate shapes. The cross section may also comprise hollows.

20       The fibers are generally obtained from a single material. However, they may also be obtained from two or more materials - these fibers are called composite or bicomponent fibers of the "side by side" or "core/shell" type.

25       The process for manufacturing the crimped fibers used in the invention consists in spinning a large number of filaments through spinnerets, the filaments being taken up in the form of tow. The number of filaments per tow may vary over a wide range. This number is often greater than 100.

The tows are either fed directly into a drawing and crimping device, or several tows are assembled in order to make a sheet which will be fed into the drawing and crimping devices. After the drawing and crimping steps, the tows or sheets may be cut directly into short fibers (a few millimeters in length) or stored before being cut into fibers in a subsequent step.

The draw ratio applied to the fibers may vary widely, for example the draw ratio may be between 1 and 5. In the crimping step, the fibers are subjected to pneumatic crimping described below, generating a three-dimensional crimp making it possible to obtain fibers with a bulky appearance, and with the crimp ratio being maintained even under high tension.

The three-dimensional crimp is a crimp which lies at least in two cutting planes and which also generates pigtail-shaped loops or curls in the fiber. This crimp shape makes it possible to obtain nonwovens with a high bulk.

The process of the invention is, in a preferred embodiment of the invention, a continuous and integrated process which comprises the spinning, drawing, crimping and cutting steps in line.

Depending on the filament count, the spinning rate may vary from 500 m/min to 2500 m/min.

The spinning temperature is between 250°C and 300°C. The filaments leaving the spinneret are cooled by a fluid, which is advantageously air.

The filaments, after convergence in the form of  
5 a tow or sheet, undergo drawing, the draw ratio of which is advantageously between 1 and 5, preferably between 2 and 4.

This drawing is generally carried out between two or more trains of heated or unheated rollers. It  
10 may be carried out cold or at a temperature which may be as high as 120°C.

The drawn filaments are fed into a crimping or texturing stage according to the principle of air packing, described especially in French Patent  
15 No. 2 041 654. Thus, the filaments are entrained by a fluid heated to a temperature above 100°C in a nozzle, the filaments being taken up on an entraining roller at the outlet of the nozzle at a lower rate than the rate at which the filaments enter the nozzle. The filaments  
20 are packed into the nozzle, forming folds, the entraining fluid escaping sideways via holes provided in the wall of the nozzle.

The crimped tow is opened out and then fed into cutting means in order to produce fibers of defined  
25 length, for example advantageously between 5 and 200 mm.

The process of the invention makes it possible to obtain filaments and then fibers having three-

dimensional crimps, but with a minimum of entanglement between the filaments. Thus, after exiting the cutting means the fibers can be easily separated and are compatible for being used especially for the  
5 manufacture of nonwovens.

Further details and subjects of the invention will appear more clearly in the light of the illustrative examples given below solely by way of indication.

10 **EXAMPLE 1**

Fibers with a three-dimensional crimp are manufactured by spinning a copolymer comprising 98% PA-6,6 and 2% PA-6 having a relative viscosity after drying of 2.7 (the viscosity is measured using a  
15 solution of the polymer in 96% sulfuric acid).

The spinning is carried out using spinnerets comprising 180 holes with a diameter of 0.3 mm. The spinning rate is 660 m/min.

The tow comprising 180 filaments is fed into a  
20 roller drawing process. The draw ratio applied is 3.

Next, the tow is fed into an air texturing process which is supplied with air at 260°C and a pressure of 9 bar.

The crimped tow is fed directly into a cutting  
25 system.

The fibers obtained have a yarn count of 2.8 dtx and a tenacity of 42 cN/tex, an elongation of 54% and a crimp contraction of 12%.

The fibers are used for the manufacture of a nonwoven used as interlining in garments.

**EXAMPLE 2**

Fibers with a three-dimensional crimp are  
5 obtained according to the process described in Example 1 but using, as polyamide, a nylon-6 of relative viscosity equal to 2.7 (measured in 96%  $\text{H}_2\text{SO}_4$ ). The polyamide also contains 0.3% by weight  $\text{TiO}_2$  as a lustering agent.

10 The spinning rate is 870 m/min and the draw ratio applied is equal to 3.

The air fed into the air-crimping device is at a temperature of 240°C and a pressure of 9 bar.

The crimped tow is wound up onto a bobbin at a  
15 rate of 2300 m/min.

The tow thus obtained is unwound in a cutting device after having undergone a heat treatment and the deposition of a size.

The fibers obtained have a yarn count of  
20 1.7 dtex, a tenacity of 50 cN/tex and an elongation of 74%. The crimp contraction is 14.5%.

These fibers are used for the manufacture of a nonwoven for interlinings.

CLAIMS

1. The use of crimped fibers for the production of nonwoven surfaces intended to be used as  
5 interlining or filling fabric for garments, characterized in that the fibers have three-dimensional crimps and a yarn count of between 0.9 dtex and 5 dtex, preferably between 1 and 3.3 dtex.

2. The use as claimed in claim 1,  
10 characterized in that the fibers are obtained by spinning a polyamide-based composition.

3. The use as claimed in claim 1 or 2, characterized in that the polyamide is chosen from the group comprising nylon-6,6, nylon-6, nylon-6,10, nylon-  
15 4,6, nylon-11, nylon-12 and copolyamides thereof.

4. The use as claimed in one of the preceding claims, characterized in that the fibers are crimped in a pneumatic crimping process by packing a tow into a nozzle.

20 5. The use as claimed in claim 4, characterized in that the gas phase used in the pneumatic crimping process is chosen from the group comprising air, steam or an air/steam mixture.

6. The use as claimed in one of the  
25 preceding claims, characterized in that the fibers have pigtail-shaped loops and/or curls.

7. A nonwoven for interlining or filling fabric for garments, comprising at least fibers with a three-dimensional crimp.

8. The nonwoven as claimed in claim 7, characterized in that it is used as interlining in the making-up of garments.

9. The nonwoven as claimed in claim 7 or 8, characterized in that it includes at least one layer formed from a nonwoven comprising fibers with a three-dimensional crimp.

10. The nonwoven as claimed in one of claims 7 to 9, characterized in that it forms a napped textile surface.

11. The nonwoven as claimed in one of claims 7 to 10, characterized in that it has a grammage of between 10 g/m<sup>2</sup> and 200 g/m<sup>2</sup>, preferably between 20 and 100 g/m<sup>2</sup>.



09/719247

30 MAR 2001

**COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY**  
 (Includes Reference to Provisional and PCT International Applications)

Attorney's Docket No.

022701-906

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**USE OF THREE-DIMENSIONAL CRIMPING FIBRES FOR MAKING STAYING MATERIAL, AND RESULTING STAYING MATERIAL**

the specification of which (check only one item below):

☐ is attached hereto.

☐ was filed as United States application

Number \_\_\_\_\_

on \_\_\_\_\_

and was amended

on \_\_\_\_\_ (if applicable).

☒ was filed as PCT international application

Number PCT/FR99/01313

on 4 June 1999

and was amended

on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 (a)-(e) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

**PRIOR FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. §119:**

COUNTRY (if PCT, indicate "PCT")	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 U.S.C. §119
France	98/07534	11 June 1998	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below.

\_\_\_\_\_  
(Application Number)

\_\_\_\_\_  
(Filing Date)

\_\_\_\_\_  
(Application Number)

\_\_\_\_\_  
(Filing Date)

**COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY (CONT'D)**  
(Includes Reference to Provisional and PCT International Applications)

Attorney's Docket No.

022701-906

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose to the Office all information known to me to be material to the patentability as defined in Title 37, Code of Federal Regulations §1.56, which became available between the filing date of the prior application(s) and the national or PCT international filing date of this application:

PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. §120:

U.S. APPLICATIONS			STATUS (check one)		
U.S. APPLICATION NUMBER	U.S. FILING DATE		PATENTED	PENDING	ABANDONED
PCT APPLICATIONS DESIGNATING THE U.S.					
PCT APPLICATION NO.	PCT FILING DATE	U.S. APPLICATION NUMBERS ASSIGNED (if any)			

I hereby appoint the following attorneys and agent(s) to prosecute said application and to transact all business in the Patent and Trademark Office connected therewith and to file, prosecute and to transact all business in connection with international applications directed to said invention:

William L. Mathis	17,337
Robert S. Swecker	19,861
Platon N. Mandros	22,124
Benton S. Duffert, Jr.	22,030
Norman H. Stepno	22,716
Ronald L. Grudziecki	24,970
Frederick G. Michaud, Jr.	26,003
Alan E. Kopecki	25,813
Regis E. Sluter	26,999
Samuel C. Miller, III	27,360
Robert G. Mukai	28,531
George A. Hovanac, Jr.	28,223
James A. LaBarre	28,632
E. Joseph Gess	28,510

R. Danny Huntington	27,903
Eric H. Weisblat	30,505
James W. Peterson	26,057
Teresa Stanek Rea	30,427
Robert E. Krebs	25,885
William C. Rowland	30,888
T. Gene Dillahunry	25,423
Patrick C. Keane	32,858
B. Jefferson Boggs, Jr.	32,344
William H. Benz	25,952
Peter K. Skiff	31,917
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Matthew L. Schneider	32,814
Michael G. Savage	32,596

Gerald F. Swiss	30,113
Charles F. Wieland III	33,096
Bruce T. Wiedler	33,815
Todd R. Walters	34,040
Ronni S. Wiljions	31,979
Harold R. Brown III	36,341
Allen R. Baum	36,086
Steven M. duBois	35,023
Brian P. O'Shaughnessy	32,747
Kenneth B. Leffler	36,075
Fred W. Hathaway	32,236



**21839**

and:

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**21839**

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P.O. Box 1404  
Alexandria, Virginia 22313-1404

Address all telephone calls to: Norman H. Stepno at (703) 836-6620.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

**COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY (CONT'D)**  
 (Includes Reference to Provisional and PCT International Applications)

Attorney's Docket No.

022701-906

FULL NAME OF SOLE OR FIRST INVENTOR <u>Harmut KRATZKE</u>		SIGNATURE <i>[Signature]</i>	DATE <u>23.02.01</u>
RESIDENCE <u>Gartenweg 8, D-24619 Rendswhüren, Germany</u>		CITIZENSHIP Germany	
POST OFFICE ADDRESS <u>Gartenweg 8, D-24619 Rendswhüren, Germany</u>			
FULL NAME OF SECOND JOINT INVENTOR, IF ANY <u>Jurgen LASCH</u>		SIGNATURE <i>[Signature]</i>	DATE <u>27.02.01</u>
RESIDENCE <u>Am Höhrkamp 2, D-24357 Neumünster, Germany</u>		CITIZENSHIP Germany	
POST OFFICE ADDRESS <u>Am Höhrkamp 2, D-24357 Neumünster, Germany</u>			
FULL NAME OF THIRD JOINT INVENTOR, IF ANY <u>Carsten SCHEFFLER</u>		SIGNATURE <i>[Signature]</i>	DATE <u>22.2.01</u>
RESIDENCE <u>Enenvelde 61, D-24536 Neumünster, Germany</u>		CITIZENSHIP Germany	
POST OFFICE ADDRESS <u>Enenvelde 61, D-24536 Neumünster, Germany</u>			
FULL NAME OF FOURTH JOINT INVENTOR, IF ANY <u>Helmut SCHULTZ</u>		SIGNATURE <i>[Signature]</i>	DATE <u>26.02.01</u>
RESIDENCE <u>Kiebitzweg 20a, D-24539 Neumünster, Germany</u>		CITIZENSHIP Germany	
POST OFFICE ADDRESS <u>Kiebitzweg 20a, D-24539 Neumünster, Germany</u>			
FULL NAME OF FIFTH JOINT INVENTOR, IF ANY		SIGNATURE	DATE
RESIDENCE		CITIZENSHIP	
POST OFFICE ADDRESS			
FULL NAME OF SIXTH JOINT INVENTOR, IF ANY		SIGNATURE	DATE
RESIDENCE		CITIZENSHIP	
POST OFFICE ADDRESS			
FULL NAME OF SEVENTH JOINT INVENTOR, IF ANY		SIGNATURE	DATE
RESIDENCE		CITIZENSHIP	
POST OFFICE ADDRESS			
FULL NAME OF EIGHTH JOINT INVENTOR, IF ANY		SIGNATURE	DATE
RESIDENCE		CITIZENSHIP	
POST OFFICE ADDRESS			